

University of Groningen

A young man with out-of-hospital cardiac arrest-it goes round and round

Panman, S. C. M. D.; ter Maaten, J. M.; Blaauw, Y.

Published in:
Netherlands Heart Journal

DOI:
[10.1007/s12471-020-01481-3](https://doi.org/10.1007/s12471-020-01481-3)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Panman, S. C. M. D., ter Maaten, J. M., & Blaauw, Y. (2021). A young man with out-of-hospital cardiac arrest-it goes round and round: it goes round and round. *Netherlands Heart Journal*, 29(9), 471-+. <https://doi.org/10.1007/s12471-020-01481-3>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.



A young man with out-of-hospital cardiac arrest—it goes round and round

S. C. M. D. Panman · J. M. ter Maaten · Y. Blaauw

© The Author(s) 2020

Answer

The electrocardiogram (ECG) at presentation at the emergency department showed a sinus rhythm of 98 beats per minute with a delta wave. ECG findings are suggestive of pre-excitation with an accessory pathway between the atria and ventricle, as has been described by Wolff, Parkinson and White. Using the Arruda algorithm, the localisation of the accessory pathway is most likely left posterior [1].

The ECG during palpitations at the cardiac care unit showed an atrioventricular reciprocating tachycardia (AVRT), a macroreentrant tachycardia over an accessory pathway, the most common type of arrhythmia associated with the Wolff-Parkinson-White syndrome [2]. An AVRT can start after an extra atrial or ventricular beat over the slow pathway when the fast pathway

is still refractory, with retrograde conduction over the accessory pathway. Treatment of choice is a sodium channel blocker that blocks conduction across and prolongs the refractoriness of the accessory pathway, allowing the fast pathway to take over [3].

During the first 12h after admission our patient had recurrent AVRT episodes. We treated him with flecainide after which the AVRT episodes ended almost every time. One time it changed into atrial fibrillation with antidromic conduction over the accessory pathway, also known as FBI—fast, broad and irregular—(Fig. 1), requiring acute cardioversion. Given the delta wave on the ECG, the high recurrence rate of supraventricular tachycardia episodes, and the out-of-hospital cardiac arrest, the day after admission an electrophysiology study (EPS) was performed. Indeed, a left posterior accessory pathway was iden-

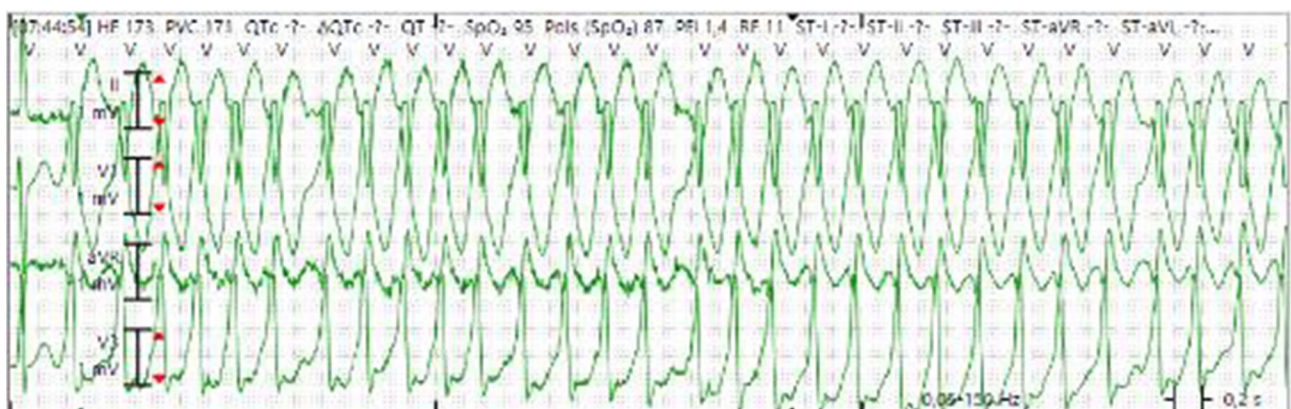


Fig. 1 Fast, broad and irregular tachycardia

S. C. M. D. Panman (✉) · J. M. ter Maaten · Y. Blaauw
Department of Cardiology, University Medical Center
Groningen, University of Groningen, Groningen, The
Netherlands
s.c.m.d.panman@umcg.nl



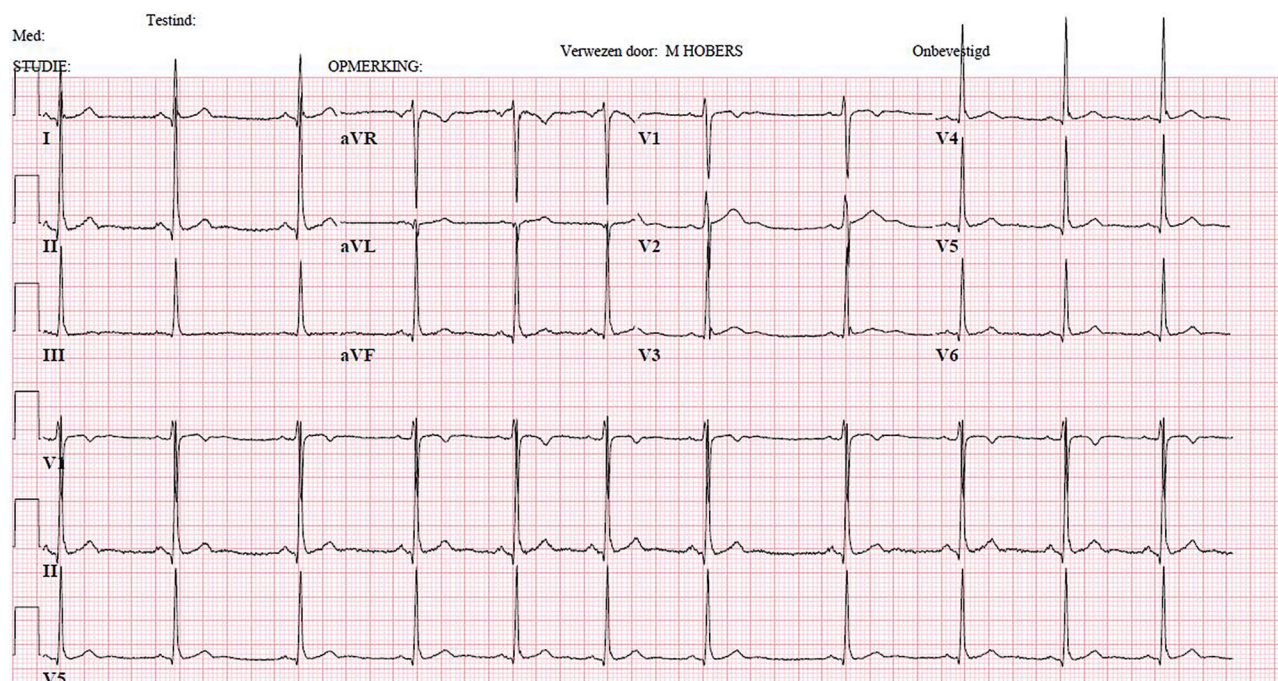


Fig. 2 The electrocardiogram after ablation of a left posterior pathway noting the absence of a delta wave

tified and successfully ablated. Fig. 2 shows the ECG after pathway ablation, where no delta wave was visible any longer. Therefore, when there is a high clinical suspicion of a Wolff-Parkinson-White syndrome, EPS should be considered.

Conflict of interest S.C.M.D. Panman, J.M. ter Maaten and Y. Blaauw declare that they have no competing interests.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material

is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

1. Arruda MS, McClelland JH, Wang X, et al. Development and validation of an ECG algorithm for identifying accessory pathway ablation site in Wolff-Parkinson-White syndrome. *J Cardiovasc Electrophysiol*. 1998;9:2–12.
2. Jabbour F, Grossman SA. Atrioventricular reciprocating tachycardia/atrioventricular reentrant tachycardia (AVRT). Treasure Island (FL): StatPearls; 2019.
3. Crozier I. Flecainide in the Wolff-Parkinson-White syndrome. *Am J Cardiol*. 1992;70:26A–32A.